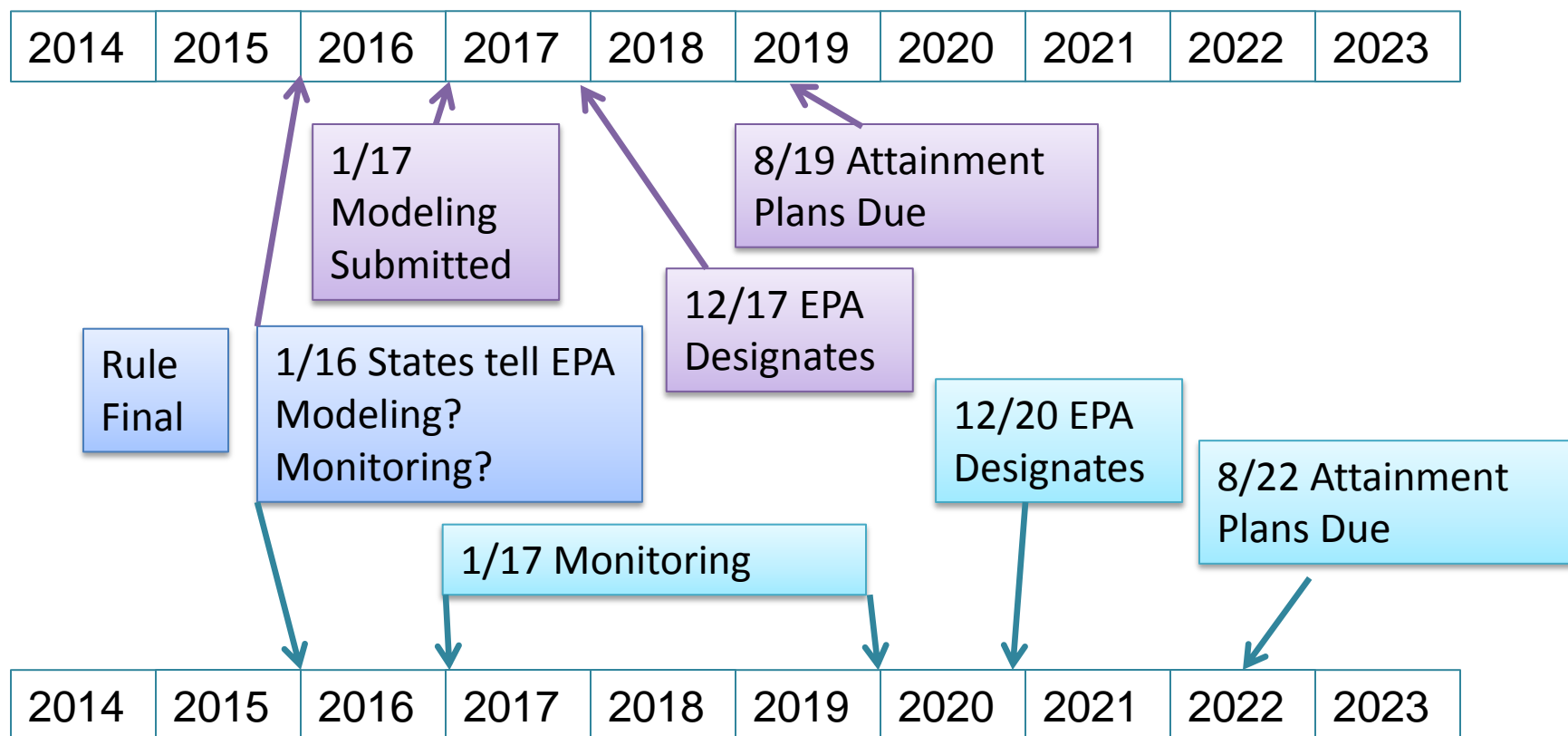


SO₂ Data Requirements Rule

- May 13, 2014, EPA Proposed the Data Requirements Rule for the 1-Hour Sulfur Dioxide Primary NAAQS.
- EPA expects to finalize rulemaking in early 2015.
- EPA Goal: Determine SO₂ attainment status where there are not currently monitors.
 - Dispersion Modeling
 - Monitoring
- Note – facilities may alternatively be impacted by new designations based on existing monitoring, or federal court settlements.

SO₂ Data Requirements Rule

Timelines:



SO₂ Data Requirements Rule

- EPA's proposed thresholds are expressed in terms of annual tons of SO₂.
- Two-pronged approach is proposed
 - Lower threshold in more populated areas
 - Higher threshold in less populated areas
- 3 Options: EPA preferred option
 - Inside CBSA's >1,000 tpy
 - Outside CBSA's >2,000 tpy
- Based on 2013 Inventory: 12 Facilities in Iowa

SO₂ Data Requirements Rule

FACILITY NAME	SULFUR DIOXIDE (TONS)
WALTER SCOTT JR ENERGY CTR	13,593
IPL - OTTUMWA GENERATING STATION	13,126
MIDAMERICAN ENERGY CO - GEORGE NEAL SOUTH	10,050
MIDAMERICAN ENERGY CO - GEORGE NEAL NORTH	8,421
MIDAMERICAN ENERGY CO - LOUISA STATION	8,285
CENTRAL IOWA POWER COOP - FAIR STATION	4,431
IPL - BURLINGTON GENERATING STATION	3,941
IPL - LANSING GENERATING STATION	3,820
MIDAMERICAN ENERGY CO - RIVERSIDE STATION	3,226
ADM CORN PROCESSING - CEDAR RAPIDS	3,163
IPL - M.L. KAPP GENERATING STATION	2,983
IPL - PRAIRIE CREEK GENERATING STATION	2,917

SO₂ Data Requirements Rule

Initial cost per monitoring site (one time):

Expense	Cost (per site)
Calibrator (Thermo 146i)	\$10,000
Zero Air Generator (Teledyne 701H)	\$6,500
SO2 Analyzer (Thermo 43i-TLE)	\$12,000
Datalogger (Agilaire/DRDAS/ESC)	\$8,500
Cellular Modem (Raven)	\$700
Meteorological Sensors (WD/WS/T/RH)	\$2,600
Trailer (Lone Star/Shelter One)	\$40,000
Modeling the Point of Highest Impact for Monitor Placement	\$7,900
Equipment purchase, contracting, site selection, etc.	\$8,600
Total	\$96,800

*Note that the estimates above do not include costs associated with power installation. Establishing electrical service requires installation of a power pole & meter. If there are no electrical lines nearby the cost for trenching power is approximately \$4 per foot. If the length of the power line used for trenching exceeds 250 feet, then a transformer must be installed at additional cost. An electrician must be retained to make final connections to the trailer.

SO₂ Data Requirements Rule

Expenses per monitoring site (ongoing):

- Based on current network costs, we estimate the annual operation and maintenance costs for a SO₂ site as approximately **\$48,000**. These operation and maintenance costs include:
 - Salaries for field operations, data management, supervision and quality assurance.
 - Transportation and travel expenses.
 - Calibration gases, equipment replacement and site communications.
 - Electrical service.

SO₂ Data Requirements Rule

Total Cost to Establish the Attainment Status for a Facility with One Monitor

- \$96,800 (est. site) + 3 x \$48,000 (O&M cost for three years of monitoring) = \$240,800

Total Cost to Determine Attainment Via the Monitoring Pathway

- 12 (sites) x \$240,800 (per site) = \$2,889,600

SO₂ Data Requirements Rule

Dispersion Modeling Costs:

Staff	Activity	Cost (per facility)
Permit Engineer	Emissions review	\$2,900
Modeler	Protocol	\$2,000
	Input files	\$600
	Post process	\$800
	Summaries	\$800
	Admin time*	\$800
Total		\$7,900

Total Cost to Determine Attainment Via the Dispersion Pathway

- 12 (sites) x \$7,900 (per site) = \$94,800

SO₂ Data Requirements Rule

Other Costs:

Engineer and dispersion modeling staff time to establish new permit limits for sources that request new emission limits to stay out of the review entirely -
\$???

Agency costs for nonattainment area planning

Costs for nonattainment area planning include:

- Determination of nonattainment boundaries:
 - Emissions characterization (base-case, culpability),
 - Background ambient air technical justification,
 - Negotiations with EPA,
 - Dispersion Modeling,
 - Public meetings and hearings.
- Development of Attainment plan:
 - Working with facilities to develop emissions reductions and contingency plans,
 - Dispersion Modeling (attainment scenarios),
 - Development of detailed consent agreements,
 - Negotiations with EPA,
 - Public meetings and hearings.
- Monitoring progress, reporting, plan modifications, maintenance.

Agency costs for nonattainment area planning

Estimated cost for the agency for each nonattainment area:

Boundary determination:	\$ 64,000
Attainment Plan development:	\$356,000
Annual Follow-up until attainment:	\$ 54,000
<u>Maintenance work: 10 yrs</u>	<u>\$ 64,000</u>
Total	\$538,000

Est. based on 6 major sources in county and 2-3 facilities in final nonattainment area.